

CITY OF HOUSTON BENZENE ACTION PLAN

An Interim Report—May 27, 2008

Benzene causes cancer.¹ There is too much benzene in the air in some Houston neighborhoods. We know this because the Texas Commission on Environmental Quality (TCEQ) monitors the amount of benzene in the air every hour of every day. Eleven companies that operate 18 facilities in or near Houston admit that they put 710,956 pounds of benzene into the air in the last reported year. Ten facilities operated by just three companies account for two-thirds of these emissions — over 220 tons per year.

Vehicles also emit substantial amounts of benzene. Vehicular benzene emissions have decreased by 70% over the past decade and will be reduced by another 45% over the next seven years due to federal regulations. If current trends continue, in three years, a handful of companies will put more benzene into our air shed than all of the vehicles combined.

In early 2007, the City proposed a Benzene Reduction Plan which asked the largest emitters to take specific actions to reduce their benzene emissions over five years. The City of Houston's plan was not adopted by any company, and no alternative plan with specific goals and timetables for major emitters has been offered. An Air Quality Task Force (AQTF) of regional stakeholders facilitated by the Greater Houston Partnership met for several months and issued a report in October 2007. That report acknowledged the need for all sectors to reduce their emissions. The City announced that it would track

¹ Benzene is a toxic chemical that enters the environment through the processing of petroleum and the use of petroleum products that contain benzene. Benzene is a constituent of naturally occurring petroleum deposits, including crude oil and natural gas; however, the primary sources of the benzene in ambient air are petroleum processing and use of refined petroleum products. Benzene is used as an industrial solvent and precursor in the production of drugs, plastics, synthetic rubber and dyes. Benzene is also an additive in gasoline, which is why mobile sources contribute to ambient levels of benzene.

the benzene levels at the seven monitors in or nearest to Houston for the next six months, and then determine the appropriate “next steps” to reduce benzene levels.

The benzene levels at some of the monitors have improved in the past six months. At five of the seven monitors, the average benzene level has dropped over the last six months, as compared to the previous six months. At one of the seven monitors, the median benzene level dropped. And at two of the seven monitors, the percent of time the monitor exceeded the EPA’s ten in one million health guideline decreased. But at all of the monitors benzene concentrations remained too high.

Our goal is to obtain steadily decreasing annual concentrations of benzene at several monitors. To ensure that we continue to see lower levels of this cancer-causing pollutant, we propose the following actions:

CITY OF HOUSTON

C-1: Continue to monitor and report ambient data regularly, with review by a qualified statistician, and provide objective analysis of benzene emissions, using proper data and methodologies.

C-2: Legally intervene in the TCEQ permit applications and renewals for large emitters whose benzene emissions affect the City.

C-3: During 2008, in the absence of a benzene reduction plan, the City will request full public hearings for one or more permits of significant emitters contributing to high benzene levels at certain monitors (Milby, Cesar Chavez, and Clinton), and we will present evidence and request findings of fact and conclusions of law regarding:

- Whether benzene can cause cancer;

- The range of excess risk of cancer for various human populations, including young people and seniors, who are involuntarily exposed to benzene;
- The concentration of benzene at one or more monitors downwind of the permit applicant;
- The contribution of the emitter to the elevated benzene levels;
- Evidence collected by a variety of methods concerning the amount of benzene emitted by the applicant;
- The technological and operational capacity of the applicant to reduce benzene emissions;
- Whether the facility would become uneconomical with lower benzene emissions; and
- The acceptable level of risk considering the values of the community, national norms, and expertise of independent public health professionals, in keeping with the AQTF's recommendation that we "ensure the accuracy of the models and decision data."

C-4: File a petition with the U.S. Environmental Protection Agency (EPA) under the Data Quality Act to correct errors in the protocols for self-reported industrial emissions which result in significant underreporting of benzene emissions.

HARRIS COUNTY

H-1: Take an active role in permit review including commenting and intervening on benzene-related permits for the largest emitters located in Harris County.

H-2: Collect, analyze and share monitoring data.

INDUSTRY

I-1: Make a commitment to benzene reduction by announcing both (a) annual goals for the next five years by the largest benzene polluters and (b) plans for achieving those reductions.

I-2: Request permit amendments setting a cap on benzene emissions, and file new permits segregating benzene. Benzene should not be lumped in with other organic compounds, some of which pose less risk of cancer.

I-3: Install fence line monitors to track benzene crossing property lines, and make this monitoring data available to both the public and regulators, in keeping with the AQTF's recommendation that industry "implement measures to better quantify site-wide emissions."

I-4: Undertake the following actions which were recommended in the AQTF report, quoted below, and provide written, public reports on the status of each action semi-annually:

- Use of infrared cameras "to find and fix emissions throughout operational areas, including floating roof storage tanks and leak detection and repair components prior to listing components on 'delay of repair' list."
- Practices adopted in response to the TCEQ's recent regulations "to better manage and avoid storage tank floating roof landings during normal operations."

- Better “procedural and/or control equipment [used] to minimize emissions associated with maintenance, start-up and shutdown activities; to minimize flare minimization; and to minimize fugitive emissions.”

TCEQ

T-1: Continue to place a senior level official in Houston to address local needs.

T-2: By rule or action on individual permits, ensure that major benzene emitters in Harris County have specific benzene emission caps that decrease emissions each year for the next 5 years.

T-3: Adopt ambient air standards for benzene, subject to review at least every 3 years.

T-4: For those facilities failing to show consistent annual progress on benzene reduction, require more frequent repair of leaks of benzene identified in LDAR and cooling tower programs.

T-5: Require and report sampling to verify reported emissions data as TCEQ is authorized to do pursuant to 30 TAC 101.8(a).

T-6: Exercise consistent and thorough oversight of facilities’ mandatory monitoring practices.

T-7: Require the testing of flares to determine actual destruction efficiency.

T-8: Allow a minimum of 30 days for public comment, including requests for a contested case hearing, on all permit applications and renewals concerning benzene, so that there is sufficient time for interested parties to review the proposed permit to determine whether a comment or request is appropriate.

T-9: Adopt a policy of continuing to drive down benzene levels, until the EPA's one in one million cancer risk level is achieved. Suggested means for accomplishing this include:

- Set annual goals for benzene emissions in a manner that will result in removal of sites from the APWL in a defined period of time.
- Establish a different mechanism for determining when to work on lowering benzene levels at a particular monitor; this could include examining trends over time.
- Other actions described above, including ambient standards.

U. S. EPA

E-1: Monitor and evaluate data collected in Houston in 2008 with the cooperation of the City of Houston, and take enforcement action based on the data where appropriate.²

E-2: Provide strong and continuous oversight of consent decrees affecting benzene releases in the Houston area.

E-3: Revise the benzene National Emission Standards for Hazardous Air Pollutants, including the relevant maximum achievable control technology (MACT) rules, in accordance with the detailed comments received from City.

² In November 2007, the City met with senior leadership in the EPA Office of Enforcement and Compliance in Washington to seek their assistance in reducing ambient benzene levels in Houston. The City presented data concerning the comparatively high ambient and emission levels from major sources. The EPA agreed to work with the City to resolve these problems. As a result of that meeting, beginning in March of 2008, EPA and the City began conducting an intensive survey and inspection of industry in and around Houston. A variety of tools, including on site facility inspections, ambient data and aerial surveillance and remote surveillance, and a review of air monitoring data are being used to assist EPA in determining compliance with federal environmental laws. The investigations are ongoing.